

Kuhn's Fording Bridge
Spanning Conewago Creek on
Township Road 552
East Berlin vicinity
Adams County
Pennsylvania

HAER No. PA-68

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
MID-ATLANTIC REGION NATIONAL PARK SERVICE
DEPARTMENT OF THE INTERIOR
PHILADELPHIA, PENNSYLVANIA 19106

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KUHN'S FORDING BRIDGE

HAER No. PA-68

Location: Spanning the Conewago Creek on Township Road 552, on line between Hamilton and Reading Townships, East Berlin vicinity, Adams County, Pennsylvania (abutments). Remaining span is on creek bank near abutments.

Date of construction: July-November 1897

Present owner: Adams County, Pennsylvania

Present use: None

Significance: The Kuhn's Fording Bridge is a partially surviving example of a covered Pratt truss bridge with a wooden Burr arch. It was constructed in 1897 by local builders.

Project information: Mitigative documentation was undertaken in 1981 and 1982 by James D. Fox, director of the Adams County Emergency Management Agency. Documentation was required under Section 106 of the National Historic Preservation Act of 1966 in anticipation of funds from the Federal Disaster Assistance Administration.

In 1897 the commissioners of Adams County, Pennsylvania, issued specifications and requested bids for building a bridge across the Conewago Creek between Reading and Hamilton Townships on what is now Township Road 552.

The specifications were in three parts -- for a masonry substructure, for a wood Burr arch superstructure, and for a metal superstructure. On July 14, 1897 the commissioners awarded the substructure contract to William G. Leas who had submitted a bid of \$1,837.85. At the same time they decided to build a wooden superstructure and awarded the contract to J.J. Smith who had submitted a bid of \$2,573.37. Since the lowest bid submitted for a two-span metal bridge was \$4,150, the decision to build a wooden bridge may have been economic.

The abutments and piers of the bridge were of coursed, rough-cut stone. The superstructure was a Pratt truss with a Burr arch framed into each span for added support. The bridge was built in two 110-foot spans with twelve panels per span and was sixteen feet wide. It was sided and roofed with a simple gable roof. The roof specifications called for pine shingles, but these were later replaced with corrugated tin.

The bridge span stood at its original site until September 1975 when it was knocked from its piers by a mobile home carried downstream by flood waters caused by hurricane Eloise.

At this point a long battle to restore the bridge began, initiated by the East Berlin Historical Preservation Society (EBHPS). The central pier and abutments still stood in place, so the immediate concern was for the wooden bridge spans which had been split apart. Since the bridge was owned by Adams County, responsibility for the bridge rested with the three county commissioners. Immediately following the hurricane the commissioners promised to restore the bridge if funding could be found.

The county commissioners applied to the Federal Disaster Assistance Administration (FDAA) for funds to rebuild the bridge. In their application they estimated the cost of building a new reinforced concrete bridge on the site at approximately \$262,000. Under FDAA regulations the county could apply for the full amount of funding for a specific project and would have to use all the money for that project (categorical funding), or they could choose to apply under the flexible funding method wherein they would receive 90 percent of the funds for the estimated project, but were free to use the funds in any way they chose. The Adams county commissioners applied under the flexible funding category.

At the same time, emergency measures were taken to salvage the wooden bridge spans from the creek bed. Both spans were pulled out of the creek and placed on the banks. Two men, Stephen Esh and Glenn Crouse, drowned in January 1976 when they rowed upstream from the Kuhn's Fording Bridge to the Peepytown Bridge, another covered bridge damaged during the hurricane. The men were apparently intending to examine the Peepytown Bridge for parts to repair the Kuhn's Fording Bridge.

In early May 1976 the FDAA approved the Adams County commissioners application for funds (90 percent of \$206,831.85 = \$186,148.66). The county commissioners continued with plans to restore the bridge and requested bids for the second phase of work -- rebuilding the wooden superstructure and replacing it on its piers. However, shortly after the bidding closed in mid-September, they reversed themselves and announced that they would not rebuild the bridge.

At the end of September the commissioners offered the bridge to the EBHPS, and at the same time stated that if the society did not respond to the offer by November 1, 1976, they would sell the bridge. Newspaper reports suggested that the commissioners were planning to spend the FDAA funds to reduce the debt on the new county home and to upgrade the police communications system.

East Berlin citizens, especially members of the EBHPS, responded angrily to these actions on the part of the commissioners. They felt that the commissioners had made a commitment to restoring the Kuhn's Fording Bridge and were now backing out on that commitment. They increased their efforts to save the bridge.

On September 30, 1976, the society informed the Pennsylvania Department of Community Affairs and the President's Advisory Council on Historic Preservation that the FDAA had not complied with federal historic preservation regulations in granting funds to Adams County. The agency had failed to notify the Advisory Council that it was providing funds for a project that would affect a structure that might be eligible for the National Register of Historic Places.

On October 21, 1976, the FDAA suspended the funds allotted to Adams County for bridge repair and on November 9 requested that the Office of Archeology and Historic Preservation of the National Park Service determine if the Kuhn's Fording Bridge was eligible for the National Register of Historic Places. The bridge was determined eligible on November 11, 1976, thus ensuring that further steps would need to be taken before the suspended FDAA funds could be released to the county.

At the same time the EBHPS initiated legal action to prevent the commissioners from selling the Kuhn's Fording Bridge. On November 3, 1976, the EBHPS and several East Berlin citizens filed a class action suit in Adams County Court asking for an injunction on three counts to require the county to restore the bridge or to replace it with a new span. A hearing was held on November 17, 1976. On December 10, 1976 Judge McPhail granted a preliminary injunction which enjoined the commissioners from selling, giving away, disposing of or removing the Kuhn's Fording Bridge or any part of it till a further court order was issued. The judge stated that he wasn't dealing with the question of what ought to be done with the bridge, only preventing it from being destroyed.

Much discussion ensued regarding the bridge's fate over the next two years. Representatives of the Advisory Council on Historic Preservation visited the bridge in December 1977.

Finally in August 1979 the Advisory Council and the county reached an agreement on steps that would be taken to preserve the bridge in some manner. The county was required to attempt to find parties interested in obtaining the Kuhn's Fording Bridge free of charge and moving it to a new location. The county was also required to record the bridge according to Historic American Engineering Record standards prior to moving it. If no one wanted the bridge, it was to be offered to museums disassembled.

In June of 1981 the Adams County commissioners notified the Pennsylvania Historical and Museum Commission (PHMC) that they had advertised the bridge and had recorded it. Since no one was interested in moving the bridge, they sought the help of PHMC in identifying museums which might be interested in the disassembled parts of the bridge.

In January 1982, it was reported in a number of local newspapers that there were still no takers for the bridge, and that the Adams County commissioners had offered the bridge to EBHPS along with \$20,000 to move the bridge to another site.

Finally, in 1982 the bridge was given to Lancaster County for use in its bridge repair program. The bridge was sawn to pieces with chain saws and the parts were stored by Lancaster County.

ALL KINDS SPECIFICATIONS.

FOR THE SUBSTRUCTURE OF A HIGHWAY BRIDGE OVER CONEWAGO CREEK
BETWEEN READING AND HAMILTON TOWNSHIPS, ADAMS CO., PA.

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FOUNDATIONS.

All excavations for the work herein contemplated shall be made as directed by the County Commissioners, or their Engineer, and the material excavated from the foundation pits shall be deposited within the wing walls.

All bailing, pumping, etc. incident to the work shall be done by the contractor; the price per cubic yard, or those given in the schedule of prices, shall be in full compensation therefor.

Foundation pits shall be excavated to the depth as shown on plan, and shall be made level and even at the bottom to receive the foundations, whether of stone or of timber, and must be sunk to solid bottom.

MASONRY.

The masonry will be either coursed or uncoursed, as may best suit the stone that is used, and laid in cement.

The stones shall be large, containing generally not less than four cubic feet, and no stone less than six inches shall be used, unless a necessary closer or by permission of the Commissioners, or for filling up the interstices between the large blocks in the heart of the wall.

The foundation courses shall consist of large, flat stones not less than ten inches thick, and extending through the wall when the width is less than four feet.

All stone work used in the masonry must be sound, durable, of good shape, and of suitable dimensions and of quality approved by the Commissioners.

The stone used in the mortar must be clean, sharp and free from
foreign matter. Walls outside joints of masonry will be raked out
to a depth of one inch and neatly pointed with cement. The
contractor, etc., will be furnished giving dimensions of the work
to be done, and the contractor shall be ready for the super-
structure price for masonry shall include the furnishing of all
labor, tools, materials, scaffolding and centering, and the cost of
operations, including coffer dams, bailing, pumping and all expenses
attending the delivery of materials, and all risks from floods or
otherwise, and damage to adjoining property.

The price for substructure shall include everything according
to plans furnished herewith and the above specifications.

The abutments and piers are to be built in cement to be fur-
nished by the contractor. It is understood and required that the
contractor shall use a derrick both at the quarry and at bridge site
at the direction of the work.

No stone shall measure less than twelve inches in its least
horizontal dimensions, nor have less bed than rise.

At least one-fourth of the stones shall be headers, evenly
distributed throughout the wall and extending into the wall.

The stones shall be roughly squared on beds, joints and faces
and laid so as to break joints in adjacent courses. All spaces
between stones in heart of wall shall be flushed with good mortar
and then packed full of spalls, or filled with spalls and grouted.
No spalls will be allowed in the beds.

Corner stones shall be large, selected stones, and shall be
neatly pitched to true line and laid on hammer dressed beds, and
be drafted at the angles.

The abutments and piers will be covered with a regular course
of stone not less than eighteen inches wide by not less than twelve
inches thick, termed the "bridge seat".

Each stone shall have beds and joints out true to the square,
and shall be laid in the work so as to form a not greater than one-
half inch joint throughout and breaking joints in adjacent courses.

stones upon which the shores shall rest shall not be less than
one foot long, two feet wide and twelve inches thick. Parapet
shall have a covering of a W-Pine roof of 7/8" boards matched
and painted.

The substructure shall be completed and ready for the super-
structure on or before Sept. first A.D. 1897.

The work to be subject to examination and approval by jury as
required by law.

All bids must be accompanied by a bond with security, or a
certified check for one-fourth the amount of bid, conditioned for
the entering into the contract, provided the work is awarded the
bidder. The contractor must also furnish bond, with approved securi-
ty, for the faithful performance of contract.

The right to reject any or all bids is reserved, as is also
the right not to let the contract if the bids tendered are not
satisfactory.

HENRY HANTZ,
ABRAM KEAGY,
JAMES DEVINE,
Commissioners.

EACHS,
Clerk.

July 14th 1897. The following bids were
received on the above work.

	Item 1	Item 2	Item 3
David Bell	145	245.10	
Wm. H. Leach	1483.63	1597.15	1832.80
Riley Brown	1893.97		2245.58
Spangler & Wagner	1750	2337	
Strayer & Maggison		2309.37	2437.50

John A. Collins 1500.
Pittsburg, Br. Co. 1489. 2052.
Contract was awarded to Wm. H. Leach
at 1832.80.

E. P. Archer Clerk

SUPERSTRUCTURE SPECIFICATIONS

FOR A MIDWAY BRIDGE OVER CONEWAGO CREEK BETWEEN
ROCKING AND HAMILTON TOWNSHIPS, ADAMS COUNTY, PENN'A.

The centre line of bridge will be at an angle of 90 degrees
with the face of abutments, as per plan.

The superstructure to consist of one span 210 feet or two
spans of 110 feet each centre to centre of end pins, according to
diagram attached.

Top chords and ends posts to be made of two channel bars
and plate riveted to top flanges with seven-eighths rivets spaced
about six inches apart; lower flanges of channels to be connect-
ed by the plates and lattice.

Lower chords to be eye bars, having the forged heads bored
to exact lengths in pairs. Eye bar heads to be so proportioned
that if tested to breaking, the bar will break in the body and
not in the pin hole.

Upper and lower pins to be accurately turned to size to
match the holes of the several parts of the trusses through
which they pass.

Intermediate posts to be made of two channel bars latticed
as specified on the plan.

Diagonals to be eye bars having the forged heads or turned
eye heads, drilled to exact lengths and made of best re-rolled
iron, as per diagram.

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CONSTRUCTION.

The bridge work to be constructed in a thorough and work-
like manner, and the details of construction to be of such
character as to insure the greatest strength and durability of
the bridge. Expansion rollers to be provided.

The party receiving the contract shall submit working
drawings showing details of connections, for the approval of the
Commissioners, or their engineer, before work on the bridge may
be commenced. The Commissioners, or their engineer, shall have
the privilege of testing the iron during process of construction
of the bridge, free of cost, and if any specimens are found defect-
ive they shall not be used in the work.

The bridge shall be completed and ready for travel on or
before *Sept 25th* A.D. 1897.

All bids must be accompanied by a bond with security, or a
certified check for one-fourth the amount of bid, conditioned for
the entering into the contract, provided the work is awarded
to the bidder. The contractor must also furnish bond, with a prov-
id security, for the faithful performance of contract.

The right to reject any or all bids is reserved, and also
the right not to let the contract if the bids tendered are not
satisfactory.

Bids will be received until 4 o'clock p.m. July 14th, 1897
at the commissioners' office in Gettysburg, Pa.

E. P. SACHS, CLERK.

HENRY HANTZ,

ABRAHAM REAGY,

JAMES DEVINE,

COMMISSIONERS.

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July 14th 1897. The following bids were opened.

	span.	2 spans.
Horseheads Bridge Co.	\$4615.	\$4410.
Pittsburg	4690.	4550.
King	4520.	4280.
Arton	4590.	4320.
Vanity Iron Works	4595.	4360.
Tippel & Wood	4600.	4380.
Glauand Const. Co.	4590.	4390.
Wrought Iron Br.	4600.	4365.
Frank R. Long	4750.	4500.

Board decided to build a wooden bridge and awarded same to J. J. Smith at \$2573.37

E. P. Sasho Sec

SPECIFICATIONS FOR THE SUPERSTRUCTURE OF A TWO SPAN WOODEN

CURR ARCH BRIDGE OVER BIG CONOWAGO, AT KUHN'S FORDING, ON LINE OF
HAMILTON AND READING TOWNSHIPS.

DIMEN

IONS Bridge to consist of two spans each 110' long between
abutment and pier, and to have an extension of 8' at each end
of bridge, to be 16' wide and 15' high in clear measurements.

PANELS

Each span to have 24 panels and 26 posts. King posts
AND 10"x14" at top 10"x10" below. All other posts 10"x10" except

POSTS. extension posts which shall be 7"x10".

CHORDS.

To consist of two members on each side ^{6 x 14} 6 1/2"x15" spliced
in alternate panels to extend 4' on abutments and to center of
pier.


TRUSSES.

To consist of two members on each side 5"x16" spliced on
each span. A 1 1/2"x16" rod will be used at each end.

SILLS.

4, 8"x12" to be used one on each abutment and two
on pier flush with top and face. Extensions sills 5"x10"
framed into end posts.

SKW

4 Skewbacks  to be used in abutment and piers
BACKS against which the arches shall rest.

FLOOR

Main floor beams 8"x12" to be spiked to posts. Intermedi-
ate floor beams to be 5"x12" of which three shall be used in
each panel.

BRACES.

Braces to be 7"x8" except end braces which shall be 7"x10"
under sway braces to be 3"x8". Top sway braces 3"x5". Short brac-
es 4"x4" one to each post.

PLATES.

Plates to be 8"x10" to be boxed over posts to the depth
of 1" and to be doubled pinned.

CROSS

Gross ties to be 6"x7" to be boxed over plates to the depth
of 1" and to be securely epiled to plates.

RAFTERS. Rafters to be 2 1/2"x5" spaced 24" centers and framed to a pitch of 7" to 1' to extend over plates 18" and to be provided with heel boards of proper width.

ROOF. Bridge to be roofed with No. 1. white pine shingles laid 7" in weather. Roof to extend 10" at each end of bridge and to be finished with barge boards.

SPLICING. Splices in chords to be formed with three inch by fifteen inch white oak plank 6' long and to be bolted through both members with eight 7/8" bolts.

BOXING. The arches, chords and posts to be boxed at all intersections to depth of 1" and to be bolted with two 7/8" bolts.

RODS. There will be four trues rods of 1 1/4" and twenty of 7/8" to each span. All rods and bolts must be furnished with washers at each end. A 1 1/4" rod will be used at each corner of bridge and 4 rods will be used in pier, passing from top of plate to masonry connecting with iron anchors at depth of 8". Twelve 7/8" rods will be used six through chords and six through plates to prevent spread of bridge.

CAMBER. Each span through its entire length to have a camber of 10".

FLOORS. Two floors to be laid, the under floor of 2 1/2" plank laid length wise in bridge with joints broken at alternate planks, top floor to be laid with 2" plank 14' long, 7" to 10" wide, put down cross-wise, both floors to be well spiked down, top floor to be provided with felloe guards 4"x5".

SIDING. Bridge to be sided with No. 1. white pine siding put on 3"x4" studding spaced 3', the siding to be put on horizontally. Inside of bridge to be sided up 3' with 1" white pine boards.

... floor to be Hemlock. Skew backs, sills, end posts,
... mension posts, floor and under sway braces to be good
... white oak free of sap. All other parts of the structure
... first class white pine of a quality approved by the
... outside wood-work to have two coats of oil paint
... of best quality.

WORKMANSHIP. All the work to be done in a good and workmanlike
manner and in conformity with specifications on file in
the Commissioners Office.

TIME. The bridge to be completed and ready for travel by
the 15 day of Nov. 1897.

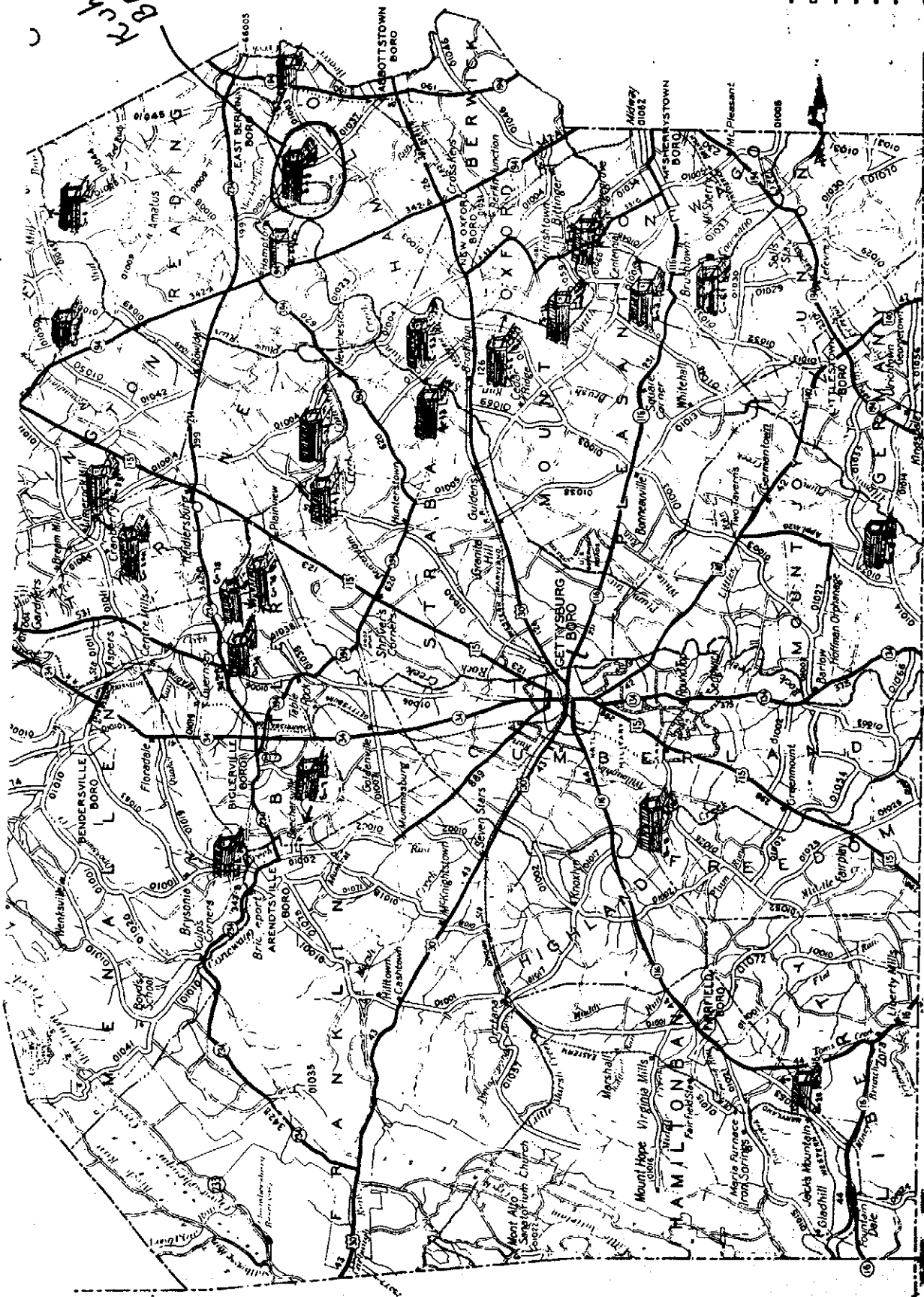
Bids will be received until 1 o'clock P.M. July 14th,
1897, and must be accompanied by a certified check or
bond with approved surety in one fourth the amount of bid
conditioned on the entering on work in case of award.
The Commissioners reserve the right to reject any or all
bids.

Henry Hantz
Abraham G. Keay Commissioners.
James Devine.

July 14 1897. The following bids were
opened.

J. J. Smith	257337	entire
H. L. Strayer	3688	6195
Samuel Stauffer	2593	
J. T. McIntire	2300	

Contract awarded to J. J. Smith
L. P. Jackson, Secy



Kuhn's Fording Bridge